

5 We claim:

1. A client method for managing global-positioning-system information, comprising:
receiving a global-positioning-system signal;
communicating the global-positioning-system signal to a universal client
10 program;
encoding the global-positioning-system signal by the universal client program;
transmitting the encoded data to a server;
receiving value added data from the server computer; and
enabling viewing of the value added data.

- 15 2. The method as recited in claim 1, wherein receiving a global-positioning-system signal further comprises:
receiving radio-frequency signals from a plurality of global-positioning-system
satellites

- 20 3. The method as recited in claim 1, wherein encoding the global-positioning-system signal by the universal client program further comprises:
encoding into protocol message form, certain information including global-
positioning-system location information derived from the global-
positioning-system signal, data corresponding to user input events

- 25 4. The method as recited in claim 3, wherein data corresponding to user input events further comprises data selected from the group consisting of user interface button clicks, and time-stamp information corresponding to the time that global-positioning-system
30 location information and user input events.

5. The method as recited in claim 1, wherein transmitting the encoded data to a server further comprises:
transmitting through the Internet an encoded and encrypted protocol message
35 containing global-positioning-system information and other information,

5 by the universal client program, to an application program executing on a
server computer.

6. The method as recited in claim 1, wherein enabling viewing of the value added
data further comprises:

10 presenting the transmitted value added data to the user by the universal client
program.

7. The method as recited in claim 6, wherein presenting the transmitted value added
data to the user by the universal client program further comprises:

15 updating the user interface of the client system.

8. A computer-readable medium having computer-executable instructions to cause a
client computer to perform a method comprising:

 receiving a global-positioning-system signal;
20 communicating the global-positioning-system signal to a universal client
program;
 encoding the global-positioning-system signal by the universal client program;
 transmitting the encoded data to a server;
 receiving value added data from server computer; and
25 enabling viewing of the value added data.

9. The computer-readable medium as recited in claim 8, wherein receiving a global-
positioning-system signal further comprises:

 receiving radio-frequency signals from a plurality of global-positioning-system
30 satellites

10. The computer-readable medium as recited in claim 8, wherein encoding the
global-positioning-system signal by the universal client program further comprises:

5 encoding into protocol message form, certain information including global-
positioning-system location information derived from the global-
positioning-system signal, data corresponding to user input events

11. The computer-readable medium as recited in claim 10, wherein data
10 corresponding to user input events further comprises data selected from the group
consisting of user interface button clicks, and time-stamp information corresponding to
the time that global-positioning-system location information and user input events.

12. The computer-readable medium as recited in claim 8, wherein transmitting the
15 encoded data to a server further comprises:
transmitting through the Internet an encoded and encrypted protocol message
containing global-positioning-system information and other information,
by the universal client program, to an application program executing on a
server computer.

20 13. The computer-readable medium as recited in claim 8, wherein enabling viewing
of the value added data further comprises:
presenting the transmitted value added data to the user by the universal client
program.

25 14. The computer-readable medium as recited in claim 13, wherein presenting the
transmitted value added data to the user by the universal client program further
comprises:
updating the user interface of the client system.

30 15. A computer data signal embodied in a carrier wave and representing a sequence
of instructions which, when executed by a processor, cause the processor to perform the
method of:
receiving a global-positioning-system signal;

5 communicating the global-positioning-system signal to a universal client
 program;
 encoding the global-positioning-system signal by the universal client program;
 transmitting the encoded data to a server;
 receiving value added data from server computer; and
10 enabling viewing of the value added data.

16. The computer data signal as recited in claim 15, wherein receiving a global-
positioning-system signal further comprises:
 receiving radio-frequency signals from a plurality of global-positioning-system
15 satellites

17. The computer data signal as recited in claim 15, wherein encoding the global-
positioning-system signal by the universal client program further comprises:
 encoding into protocol message form, certain information including global-
20 positioning-system location information derived from the global-
 positioning-system signal, data corresponding to user input events

18. The computer data signal as recited in claim 17, wherein data corresponding to
user input events further comprises data selected from the group consisting of user
25 interface button clicks, and time-stamp information corresponding to the time that global-
positioning-system location information and user input events.

19. The computer data signal as recited in claim 15, wherein transmitting the encoded
data to a server further comprises:
30 transmitting through the Internet an encoded and encrypted protocol message
 containing global-positioning-system information and other information,
 by the universal client program, to an application program executing on a
server computer.

- 5 20. The computer data signal as recited in claim 15, wherein enabling viewing of the value added data further comprises:

 presenting the transmitted value added data to the user by the universal client program.

- 10 21. The computer data signal as recited in claim 20, wherein presenting the transmitted value added data to the user by the universal client program further comprises:

 updating the user interface of the client system.

- 15 22. A client method for managing global-positioning-system information, comprising: receiving global-positioning-system data;

 converting the global-positioning-system data into digital representations of the latitude, longitude, and elevation;

- 20 combining the digital representation with an encoded representation of user actions involving the user interface elements provided and managed by a universal client program;

 packetizing mobile terminal server data and the combined data;

 transmitting the packetized data to a server;

 receiving response data from the server, including value-added information;

- 25 decoding the received data;

 formatting the decoded data;

 decoding the formatted data by the universal client program; and

 presenting the decoded value-added information by altering an aspect of the user interface, by the universal client program.

30

23. A computer-readable medium having computer-executable instructions to cause a client computer to perform a method comprising:

 receiving global-positioning-system data;

 converting the global-positioning-system data into digital representations of the latitude, longitude, and elevation;

35

5 combining the digital representation with an encoded representation of user
actions involving the user interface elements provided and managed by a
universal client program;
packetizing mobile terminal server data and the combined data;
transmitting the packetized data to a server;
10 receiving response data from the server, including value-added information;
decoding the received data;
formatting the decoded data;
decoding the formatted data by the universal client program; and
presenting the decoded value-added information by altering an aspect of the user
15 interface, by the universal client program.

24. A computer data signal embodied in a carrier wave and representing a sequence
of instructions which, when executed by a processor, cause the processor to perform the
method of:

20 receiving global-positioning-system data;
converting the global-positioning-system data into digital representations of the
latitude, longitude, and elevation;
combining the digital representation with an encoded representation of user
actions involving the user interface elements provided and managed by a
25 universal client program;
packetizing mobile terminal server data and the combined data;
transmitting the packetized data to a server;
receiving response data from the server, including value-added information;
decoding the received data;
30 formatting the decoded data;
decoding the formatted data by the universal client program; and
presenting the decoded value-added information by altering an aspect of the user
interface, by the universal client program.

5 25. A server method for managing global-positioning-system information,
comprising:

receiving an encoded global-positioning-system signal data from a client system,
by an application program;
processing the global-positioning-system data by the application program running
10 on server system, in conjunction with another information source available
to the server; and
transmitting the results of the processing to the client.

26. A computer-readable medium having computer-executable instructions to cause a
15 server computer to perform a method comprising:

receiving an encoded global-positioning-system signal data from a client system,
by an application program;
processing the global-positioning-system data by the application program running
on server system, in conjunction with another information source available
20 to the server; and
transmitting the results of the processing to the client.

27. A computer data signal embodied in a carrier wave and representing a sequence
of instructions which, when executed by a processor, cause the processor to perform the
25 method of:

receiving an encoded global-positioning-system signal data from a client system,
by an application program;
processing the global-positioning-system data by the application program running
on server system, in conjunction with another information source available
30 to the server; and
transmitting the results of the processing to the client.

28. A server method for managing global-positioning-system information,
comprising:

35 receiving global-positioning-system-related data;

- 5 decoding mobile terminal server and digital representations of the latitude,
longitude, and elevation;
passing the mobile terminal server and the digital representations of the latitude,
longitude, and elevation an application program;
preparing a database query from the mobile terminal server data and the digital
10 representations of the latitude, longitude, and elevation;
performing the database query;
receiving query results by an application program;
formatting the received query results into protocol messages by the application
program for delivery to a universal client program;
15 packetizing the formatted data; and
transmitting the packetized data to a client.
29. A computer-readable medium having computer-executable instructions to cause a
server computer to perform a method comprising:
20 receiving global-positioning-system-related data;
decoding mobile terminal server and digital representations of the latitude,
longitude, and elevation;
passing the mobile terminal server and the digital representations of the latitude,
longitude, and elevation an application program;
25 preparing a database query from the mobile terminal server data and the digital
representations of the latitude, longitude, and elevation;
performing the database query;
receiving query results by an application program;
formatting the received query results into protocol messages by the application
30 program for delivery to a universal client program;
packetizing the formatted data; and
transmitting the packetized data to a client.

- 5 30. A computer data signal embodied in a carrier wave and representing a sequence of instructions which, when executed by a processor, cause the processor to perform the method of:
- receiving global-positioning-system-related data;
- decoding mobile terminal server and digital representations of the latitude,
- 10 longitude, and elevation;
- passing the mobile terminal server and the digital representations of the latitude, longitude, and elevation an application program;
- preparing a database query from the mobile terminal server data and the digital representations of the latitude, longitude, and elevation;
- 15 performing the database query;
- receiving query results by an application program;
- formatting the received query results into protocol messages by the application program for delivery to a universal client program;
- packetizing the formatted data; and
- 20 transmitting the packetized data to a client.
31. A computerized apparatus, comprising:
- a processor;
- a global-positioning-system receiver device, operably coupled to the processor;
- 25 an operating system executing on the processor and operably coupled to the receiver device that receives, that receives output of the global-positioning-system device; and
- a universal client program that facilitates the operation of a plurality application programs running respectively on a plurality of operably coupled server systems, that receives the output of the global-positioning-system device from the operating system, and passes the output of the global-positioning-system device to the at least one of the application programs, operates the functions of user interface.
- 30

5 32. The computerized apparatus recited in claim 31, wherein the universal client
program further converts inputs from the user interface into protocol messages for
transmission to at least one of the application programs.

33. A computerized apparatus, comprising:

10 a processor;

an operating system executing on the processor and operably coupled to the

receiver device that receives, that receives output data of a global-

positioning-system device on a separate computerized apparatus; and

a plurality of application programs executing on the processor, operably coupled

15 to the operating system, and enabled for communication with a universal

client program on a separate computerized apparatus, that performs at

least one programmed function related to the functionality associated with
a user.

20 34. The computerized apparatus recited in claim 33, further comprising:

at least one database operably coupled to at least one of the application programs,

the at least one database having data sets associated with a user who has

access to server system, and the at least one database having information

pertaining to the geographic location derived from the global-positioning-

25 system data.